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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,568	01/22/2002	Mou-Shiung Lin	JCLA8533	6093
7590		06/08/2004	EXAMINER	
J.C. Patents, Inc.		MITCHELL, JAMES M		
4 Venture, Suite 250		ART UNIT		
Irvine, CA 92618		2827		
		PAPER NUMBER		

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/055,568

Applicant(s)

LIN ET AL. 

Examiner

James M. Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17, 21, 23-40, 43-48, 52-60 and 139-142 is/are pending in the application.
- 4a) Of the above claim(s) 30-40, 43-48, 52-60, 141 and 142 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 21, 25-29 and 139 is/are rejected.
- 7) ☒ Claim(s) 23, 24 and 140 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election***

Applicant's election without traverse of claims 1-17,21,23-29,13-140 filed January 9, 2004 is acknowledged.

Claims 30-40, 43-48, 52-60, 141 and 142 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 15 recites the limitation "the traces of the internal circuitry" in line 2-3 and claim 15, "the neighboring patterned wiring layer" in line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ma et al. (U.S 6,154,366).

Ma (Fig 2d, j, 3l) discloses a chip package structure comprising: (cl.1, 9, 17) a substrate (112) having a surface; only a die (106), wherein the die has an active surface (claim 1 of Ma), a backside that is opposite to the active surface, and a plurality of metal pads (108) located on the active surface, whereas the backside of the die is adhered to the surface of the substrate, and the surface of the substrate has an area larger than that of the active surface of the die; and a thin-film circuit layer (102) located over the substrate and the die and having an external circuitry (wiring, 124 in trenches, 128), wherein the external circuitry is electrically connected (conductive material connected to another conductive material) to the metal pads of the die and extends to a region outside the active surface of the die, the external circuit has a plurality of bonding pads (portion of 124 contacting 158,156) located on a surface layer of the thin-film circuit layer and each bonding pad is electrically connected to a corresponding metal pad of the die; (cl.2) wherein the die has an inherent internal circuitry ("microelectronic") and a plurality of active devices located on the active surface of the die and the internal circuitry is electrically connected to the active devices, whereas the internal circuitry contains the metal pads (i.e. connected to 108); (cl.4) wherein a length of the traces (124) of the external circuitry is greater (trace close to size of chip) than that of traces of the internal circuitry; (cl.6) the thin-film circuit layer comprising at least a patterned wiring layer (124) and a dielectric layer (102), the dielectric layer is located over the substrate and the die, and the patterned wiring layer is located over the dielectric layer,

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whereas the patterned wiring layer is electrically connected to the metal pads of the die through (trenches, 128) the dielectric layer and forms the external circuitry and the bonding pads of the external circuitry; (cl. 7) the dielectric layer has a plurality of thru-holes (128), and the patterned wiring layer is electrically connected to the metal pads of the die via by the thru-holes; (cl.8) wherein a via metal is located inside each thru-hole, and the patterned wiring layer is electrically connected to the metal pads of the die via by the via metal vias (wiring, 124, lining trench/ via); (cl. 9-12) with at least one passive, inherent capacitor device positioned inside or on the thin-film circuit layer formed partly or wholly by a part of the patterned wiring layer (capacitance formed between two conductors separated by insulating layer); (cl. 13, 21) with the thin film circuit is a porous dielectric material (all material is porous to a degree); (cl.14) the thin-film circuit layer comprising a plurality of patterned wiring layers (124") and a plurality of dielectric layers (102,102',102"), in which the patterned wiring layers and dielectric layers are alternately formed and the patterned wiring layers are electrically connected to the neighboring patterned wiring layers through the dielectric layer, one of the dielectric layers (176) is formed between the thin-film circuit layer and the substrate, the patterned wiring layer that is closest to the substrate is electrically connected to the metal pads of the die through the dielectric layer that is closest to the substrate, where the patterned wiring layer that is farthest away from the substrate contains the bonding pads (portion in contact with 156); (cl.15, 16) each of the dielectric layers has a plurality of thru-holes, by which each of the patterned wiring layer is electrically connected to neighboring patterned wiring layers (stacked wiring 124), where the patterned wiring layer that is

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closest to the substrate is electrically connected to the metal pads of the die through the thru-holes/ via metal (wiring on surface of 128) that are closest to the substrate; (cl. 25) further comprising a filling layer (176) located between the surface of the substrate and the thin-film circuit layer (102) and surrounding the peripheral of the die, and a surface of the filling layer is lying in the same plane as the active surface and therefore is planar to the active surface of the die; (cl. 27) with a passivation layer (102') located on top of thin film circuit layer (102); (cl. 28,29) wherein solder ball, bonding points (156) are located on the bonding pads; (cl. 139) wherein the substrate comprises an inwardly protruded area located on a surface of the substrate, allowing die to be put into the inwardly protruded area (i.e the die in inward area).

The prior art does not appear to show the intended use limitation as those illustrated in claims 3-5, such as: a signal from one of the active devices is transmitted to the external circuitry via the internal circuitry, and from the external circuitry back to other active devices via the internal circuitry; and to reduce RC delay and the external circuitry further comprising a power/mound bus. However, the statement of intended use does not result in a structural difference between the claimed apparatus and the apparatus of Ma. Further, because the apparatus of Ma is inherently capable of being used for the intended use the statement of intended use does not patentably distinguish the claimed apparatus from the apparatus of Ma. Similarly, the manner in which an apparatus operates is not germane to the issue of patentability of the apparatus; *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889, 1891 (BPAI 1988); *In re Finsterwalder* 168 USPQ 530 (CCPA 1971); *In re Casey*

152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). And, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims."; In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963)). And, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim Ma et al. (U.S 6,154,366) rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S 6,154,366) as applied to claim 1 and further in combination with Ishida et al (U.S 5,450,101).

Ma further discloses the filling as a moisture barrier, but does not appear to explicitly show that the filling layer consist of an epoxy and polymer.

Ishida utilizes epoxy.

It would have been obvious to one of ordinary skill in the art to form the layer of Ma as an epoxy in order to provide moisture barrier as required by Ma and taught in Ishida (Col. 2, Lines 13-15).

***Allowable Subject Matter***

Claims 23, 24 and 140 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious forming a die on a substrate including all the limitations of the independent claims.

***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment of January 14, 2003 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

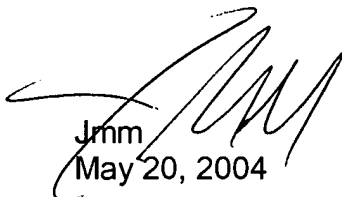


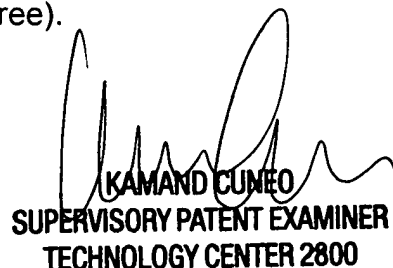
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 10:30-8:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jmm  
May 20, 2004

  
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